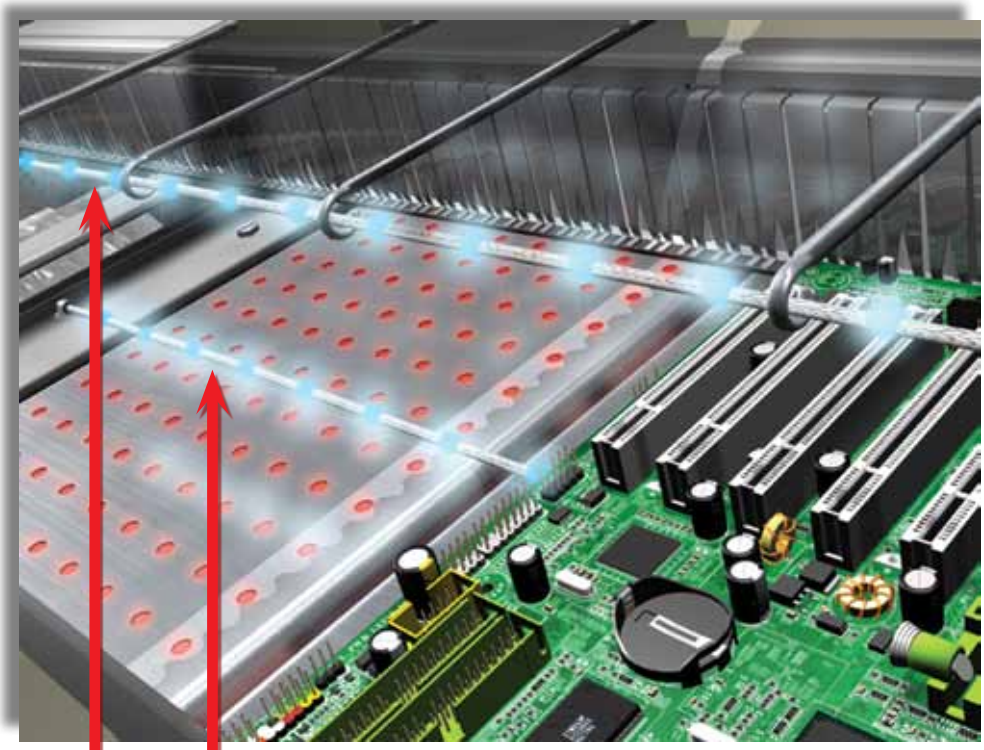
KIC 24/7 Wave™

Wave Solder Process Management

24/7 Process Monitoring



- Automatic profiling of every product
- Eliminate verification profiling
- Automatic SPC charting
- Process traceability for each product
- Ease of use operations

Automatic Profiling, SPC and Traceability for Wave Solder

The KIC 24/7 Wave brings an innovative level of automation to the wave solder process: around-the-clock monitoring, SPC charting, analysis, documentation, and production traceability — ALL in a single, easy to use product. Continuous tracking occurs in the background, never interrupting your production. The real-time process data enables engineers and managers to make crucial cost containment and quality control decisions.

Automatic Profiling

The KIC 24/7 Wave includes dual custom 14-TC KIC Probes installed inside the wave solder machine at the product level. The probes run the length of the preheat section and gather real-time process data. The KIC 24/7 Wave uses this data to automatically calculate the preheat profile for every product manufactured. Additionally, the solder pot temperature and conveyor speed are all continuously monitored. Through this automation, the need for periodic verification profiles is eliminated.

Automatic SPC Charting

Process data is automatically charted for all critical process specs: maximum preheat temperature, soak time, slope, wave temperature, etc. The data is plotted on real-time control charts and Process Capability (Cpk) is calculated for each specification. Any process drift outside of control limits or defined Cpk value will trigger a warning. The overall Process Window Index (PWI) is also charted, providing a real-time Cpk for the entire preheat process. Any out-of-spec process (PWI is over 100%) will immediately trigger an alarm that can shutdown the in-feed conveyor. Automated real-time SPC helps identify potential defects before they happen.

Automatic Process Traceability

The KIC 24/7 Wave provides full process traceability. All process data and its fit to the available process window is automatically recorded and stored for every product, and can be retrieved at any point in the future. When combined with the barcode option, process data for every product is automatically linked to the product's barcode number.

KIC gives you the optimal wave solder process ...and keeps you there 24/7!

KIC ON BOARD

KIC® *Innovation That Works™*

KIC 24/7 Wave System

Base System Components

KIC Probes: Each probe contains 14 internal TC's for monitoring process temperature . The probes run the length of the preheat process and are positioned at the product level. One additional TC is installed to monitor the solder pot temperature.

Sensor/Encoder: The Sensor monitors, tracks and documents all product that passes through the oven. The Encoder continuously measures conveyor speed.

eTPU: The *Ethernet Thermocouple Processing Unit* acquires data from the probes and sensors, and transmits it to the computer.

Communication cables: Cables are included for connecting the eTPU to the KIC Probes, Product Sensor and computer. A USB to Serial Adapter is included for connecting the KIC Profiler to the computer.

Software and User Manual

Optional System Components

KIC RPM™ (Remote Process Monitoring): Process data for every board is output and monitored remotely in real-time. *See the KIC RPM data sheet for complete product details and specifications.*

Alarm Relay: The KIC Alarm Relay connects to the eTPU and allows KIC 24/7 Wave to activate warning lights, audible alarms, and/or stop the process in-feed conveyor.

Barcode Option: With a customer supplied serial barcode reader, the Barcode Option enables Process Traceability and/or Process Control for every product linked to its barcode number.

eTPU/KIC Probe

Accuracy: ..... ±1.2°C
Readings/second:..... 13
Thermocouples:..... Type K
Temperature Range: . -150°C to 450°C
Dimensions:
eTPU (LxWxH):..... 308.6mm x 173.5mm x 35.8mm
KIC Probe: ..... length and thermocouple spacing is customized to each oven
Communications:..... Ethernet, RJ-45 connector
Computer Capability: PC
Power Requirements:. 12V DC @ 300mA

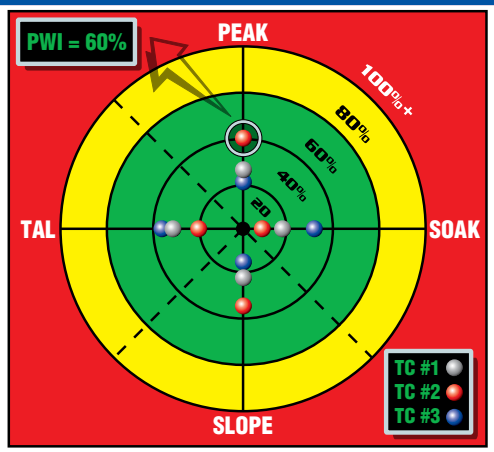
System Requirements

The KIC 24/7 Wave requires a KIC Profiler. *Please contact KIC for details about the profiler that meets your application requirements.*

Risk-Free Guarantee

All KIC products are designed to give maximum value and fast payback by streamlining your thermal process. Investment in a KIC product is a step toward total process control and quality management. All KIC products come with a no questions asked, 30-day money back guarantee.

The Process Window Index™



Profiling Reduced to a Single Number

The PWI measures the profile's fit to the process window in a mathematical and objective manner by using a single number. This aids in optimizing the process by comparing and ranking alternative profiles in terms of their fit to the available process window. The lower the PWI, the more efficient and stable the process! *(See the PWI data sheet for a detailed explanation)*

Computer Configuration

Minimum System Requirements

Dual Core / 1 GHz Processor PC with 2 GB RAM
2 GB available storage
Video 1024 x 768 resolution / 16-bit
1 availalbe USB port (for data download)
1 available USB port (for software key)
1 available Ethernet port or 1 available USB port with Ethernet to USB
Microsoft Windows XP, Vista, or 7 (32-bit or 64-bit)

**Note: 2 additional powered USB ports may be needed for optional accessories

Corporate Headquarters
16120 West Bernardo Drive • San Diego, CA 92127 USA
+1(858)673-6050 Phone • +1(858)673-0085 FAX
sales@kicmail.com • tech@kicmail.com

European Regional Office
europe.sales@kicmail.com • europe.tech@kicmail.com

Asian Regional Office
asia.sales@kicmail.com • asia.tech@kicmail.com

www.kicthermal.com

FEATURES and SPECIFICATIONS

Copyright © KIC. All rights reserved. Patents pending. Specifications subject to change without notice. KIC and KIC Thermal Profiling are divisions of and registered trademarks and tradenames of Embedded Designs Inc. KIC Explorer, SlimKIC 2000, KIC 24/7, KIC 24/7 Wave, KIC Vision, KIC Navigator, KIC Navigator Power, KIC Auto-Focus, KIC Auto-Focus Power, KIC RPM, KIC Carrier, Wave Surfer, KIC MVP, RPI, Process Window Index, PWI, the Lead Free Capable symbol, KIC ON BOARD and the KIC logo are trademarks or registered trademarks of KIC. All other trademarks and tradenames are the property of their respective holders.

KIC® *Innovation That Works™*

Rev 1201A